BY ORDER OF THE
SECRETARY OF THE AIR FORCE

AFMS 13E1
23 January 1997

Manpower Standard

★ *AIRFIELD OPERATIONS (AO) FLIGHT*

★This Air Force Manpower Standard (AFMS) quantifies the manpower required to accomplish the tasks described in the process oriented description for varying levels of workload. The AO Flight is responsible for providing airfield management and air traffic control operations to the installation's flying wing, transient, and civilian airfield and air traffic users. This AFMS defines the manpower allowed to support an objective wing AO Flight at Air Mobility Command, Air Combat Command, US Air Forces Europe, Air Force Materiel Command, Air Education and Training Command, Air Force Space Command, Air Force Special Operations Command, and Pacific Air Forces bases. It does not apply to Air National Guard and Air Force Reserve bases. This AFMS does not apply to flights that have been cost compared (OMB Circular A-76). This AFMS does not apply to locations on the base closure list. It applies to peacetime operations only. AFI 13-203, *Air Traffic Control*, and AFI 13-213, *Airfield Management and Base Operations*, contain USAF policy and procedural guidance for the AO Flight. This AFMS has been developed in accordance with policy and guidance from HQ USAF/PER, AFCQMI, AFI 38-201, *Determining Manpower Requirements*, and AFMAN 38-208, *Air Force Management Engineering Program*. Send comments and suggested improvements on AF Form 847, **Recommendation for Change of Publication**, through channels, to AFCQMI/MQAA, 550 E Street East, Randolph AFB, Texas 78150-4451.

★ *SUMMARY OF CHANGES*

This AFMS supersedes AFMS 13E1, 4 December 1995. It implements format changes to comply with SAF requirements. It also includes minor administrative changes in the overall layout of the AFMS. This AFMS is a total revision. For this reason, except for the stars used above, there will be no further stars used in this document to indicate a change.

1. Core Composition. The core composition for the AO Flight is Flight Support, Control Tower, Radar Approach Control (RAPCON), and Airfield Management. See Attachments 1-6 for a further breakout of the elements' core compositions.

1.1. **Core Manpower Requirement.** 43

1.2. **Core Manpower Range.** 5 - 107

1.3. **Programming Factor.** See Attachments 1-6.

2. Standard Data:

2.1. **Approval Date.** 7 January 1997

2.2. **Manpower Data Source.** Workshop measurement and historical documents.

2.3. **Manpower Equation.** See Attachments 1-6.

Supersedes AFMS 13E1, 4 December 1995
OPR: AFCQMI/MQAA (MSgt Geno Brabham)
Certified by: AFCQMI/MQA (Lt Col Rudy K. Bruback)
Pages: 58/Distribution: F

2.4. **Workload Factor .** See Attachments 1-6.

2.5. **Points of Contact:**
2.5.1. **AFCQMI Representatives:** MSgt Geno Brabham and Mr. Richard Fuller, AFCQMI/MQAA. For AFCQMI representatives of the individual AO Flight elements, see Attachments 1-6.
2.5.2. **Functional Representatives:** CMSgt Phillip Davenport, AFFSA/XAF and CMSgt Coney and SMSgt Robert James, AFFSA/XATF.

3. Application Instructions:

3.1. **Step 1.** Compute the core manpower for the flight using the manpower equation and the application instructions in Attachments 1-6.

3.2. **Step 2.** Determine the manpower requirements for Flight Support Element, Attachment 1, using the application instructions. Apply the requirements earned to the Manpower Matrix Table in Attachment 1.

3.3. **Step 3.** Determine the manpower requirements using the application instructions for the Control Tower Operations Element, Attachment 2, and/or Radar Approach Control (RAPCON), Attachment 3, and/or Ground Controlled Approach (GCA), Attachment 4, and/or Radar Final Control (RFC), Attachment 5. The four elements mentioned above (Control Tower, RAPCON, GCA, RFC) must be aggregated (totalled). Do not round up any of the above elements until all have been applied and added together. Apply the requirements earned to the Manpower Table.

3.4. **Step 4.** Determine the manpower requirements for the Airfield Management Element, Attachment 6, using the application instructions. Apply the requirements earned to the Manpower Attachment 6.

3.5. **Step 5.** Determine skill and grade distribution using the Standard Manpower Table or Matrix in the appropriate sections.

4. Statement of Conditions/Assumptions. Normal flight core hours of operation are 16 hours a day, 7 days a week. This assumes wing flying operations are in effect Monday - Friday during the day and early evening. Periodic shifts in hours are required to cover night flying or special missions. These extended hours have been accounted for and credited in this standard.

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Air Force Center for Quality and Management Innovation

Attachments
1. Flight Support Element
2. Control Tower Operations
3. RAPCON Element
4. GCA Element
5. RFC Element
6. Airfield Management Element

FLIGHT SUPPORT ELEMENT

The Airfield Operations (AO) Flight Support Element is responsible for providing overall airfield management and air traffic control operations to the installation's flying wing, transient, and civilian airfield and air traffic users. This element defines the manpower allowed to support an objective wing AO Flight at Air Mobility Command, Air Combat Command, US Air Forces Europe, Air Force Materiel Command, Air Education and Training Command, Air Force Space Command, Air Force Special Operations Command, and Pacific Air Forces bases. It does not apply to Air National Guard and Air Force Reserve bases. This element does not apply to flights that have been cost compared (OMB Circular A-76). This element does not apply to locations on the base closure list. It applies to peacetime operations only. AFI 13-203 and AFI 13-213 contain USAF policy and procedural guidance for the AO Flight. This element has been developed in accordance with policy and guidance from HQ USAF/PER, AFCQMI, AFI 38-201, and AFMAN 38-208.

A1.1. Core Composition:

A1.1.1. Core Manpower Requirement. 4

A1.1.2. Core Manpower Range. 1 - 8

A1.1.3. Programming Factor. None.

A1.2. Standard Data:

A1.2.1. **Approval Date.** 7 January 1997

A1.2.2. **Manpower Data Source.** Workshop measurement and historical documents.

A1.2.3. **Manpower Equation.** See Matrix at Appendix B.

A1.2.4. **Workload Factor:** None.

A1.2.5. **Points of Contact**
A1.2.5.1. **AFCQMI Representatives.** Mr. Richard Fuller and MSgt Geno Brabham, AFCQMI/MQAA.
A1.2.5.2. **Functional Representatives.** Maj Holst, AFFSA/XATF and Capt Hughes, AFFSA/XATF.

A1.3. Application Instructions:

A1.3.1. **Step 1.** Determine core manpower for this element by applying Attachment 2, Control Tower Operations Element; Attachment 3, RAPCON Element; Attachment 4, GCA Element; Attachment 5, RFC Element; and Attachment 6, Airfield Management Element manpower equations.

A1.3.2. **Step 2.** Determine variance manpower by using the variances at Appendix C.

A1.3.3. **Step 3.** Add the manpower earned from paragraphs A1.3.1 and A1.3.2 above.

A1.3.4. **Step 4.** Determine manpower for this element by using the Flight Configuration and Flight Manpower 1C1X1's/1COX1's Earned columns on the manpower matrix at Appendix B.

A1.3.5. **Step 5.** Determine skill and grade distribution using the AFSC/Grade column on the Manpower Matrix Table (Appendix B) and the applicable variances (Appendix C) to determine the appropriate grades.

A1.4. Statement of Conditions/Assumptions. Normal flight core hours of operation are 8 hours a day, 5 days a week. The AO Flight Support Element core level provides two officers with the senior officer serving as Flight Commander. The administrative specialist supports all flight elements.

Appendices
A - Functional Statement/Process Oriented Description
B - Manpower Table
C - Variances

FUNCTIONAL STATEMENT/PROCESS ORIENTED DESCRIPTION

FLIGHT SUPPORT ELEMENT

Responsible for supervision and management of Air Traffic Control (ATC) and Airfield Management (AM) activities in support of the airfield, base operations, control tower, and radar facility. Responsible for managing the AO training and standardization/evaluation programs. Directs the Terminal Instrument Procedures (TERPS) program. Provides administrative support to the flight.

FLIGHT SUPPORT
MANPOWER MATRIX TABLE

FLIGHT CONFIGURATION	**FLIGHT MANPOWER 1C1X1'S/1COX1'S EARNED**	**SPACES**	**SUPPORT POSITION**	**AFSC/GRADE**
SINGLE FACILITY	N/A	2 (4)	AOF/CC (TSN-IF ATC (TERPS-IF ATC ADMIN	13B3A/CPT 1C171/MSG) 1C171/TSG) 3A051/SSG
TWO FACILITIES (includes contract Base Ops)	1-34	4	AOF/CC TSN TERPS ADMIN	13B3A/CPT 1C171/MSG 1C171/TSG 3A051/SSG
TWO FACILITIES (includes contract Base Ops)	35+	5	AOF/CC AOF/DO TSN TERPS ADMIN	13B3A/CPT 13B3A/LT 1C171/MSG 1C171/TSG 3A051/SSG
TOWER RADAR BASE OPS	1-44	5	AOF/CC AOF/DO TSN TERPS ADMIN	13B3A/CPT 13B3A/LT 1C171/MSG 1C171/TSG 3A051/SSG
TOWER RADAR BASE OPS	45-59	6	AOF/CC AOF/DO CATCT CSE TERPS ADMIN	13B3A/MAJ 13B3A/CPT 1C171/MSG 1C171/TSG 1C171/TSG 3A051/SSG
TOWER RADAR BASE OPS	60-84	7	AOF/CC AOF/DO AOF/SO CATCT CSE TERPS ADMIN	13B3A/MAJ 13B3A/CPT 13B3A/LT 1C171/MSG 1C171/TSG 1C171/TSG 3A051/SSG

FLIGHT CONFIGURATION	**FLIGHT MANPOWER 1C1X1'S/1COX1'S EARNED**	**SPACES**	**SUPPORT POSITION**	**AFSC/GRADE**
TOWER	85+	8	AOF/CC	13B3A/LTC
RADAR			AOF/DO	13B3A/CPT
BASE OPS			AOF/SO	13B3A/LT
			CATCT	1C171/MSG
			CSE	1C171/TSG
			TERPS	1C171/TSG
			ADMIN	3A051/SSG
			ADMIN	3A051/SSG

AOF/CC: Airfield Operations Flight Commander
AOF/DO: Airfield Operations Flight Operations Officer
AOF/SO: Airfield Operations Flight Systems Officer
CATCT: Chief, Air Traffic Control Training
CSE: Chief, Standardization and Evaluation
TSN: Chief, Air Traffic Control Training and Standardization
TERPS: Terminal Instrument Procedures Specialist

VARIANCES

FLIGHT SUPPORT ELEMENT

SUMMARY

VARIANCE NUMBER	TITLE
A1C.1	Positive Mission Variance for Officer Training Program (OTP)
A1C.2	Positive Mission Variance for Air Traffic Control Liaison
A1C.3	Positive Mission Variance for Presidential Support Responsibilities
A1C.4	Positive Mission Variance for Air Force Flight Test Center (AFFTC) Complex Control Board (CCB) Member Responsibilities
A1C.5	Positive Environment Variance for Interpreter
A1C.6	Positive Mission Variance for Air Traffic Control (ATC) Automation Specialist
A1C.7	Positive Mission Variance for Air Traffic Controller Qualification Program

VARIANCES

FLIGHT SUPPORT ELEMENT

DETAIL

A1C.1**. Title.** Positive Mission Variance for Officer Training Program (OTP).

A1C.1.1. **Definition.** This variance provides for an additional officer position to manage/instruct OTP students.

A1C.1.2. **Rationale.** This variance is an approved Air Force variance for support of the OTP program. Although this variance may apply to limited locations, the Air Staff OPR has designated this as an Air Force variance.

A1C.1.3. **Impact.** + 1 manpower requirement (AFSC T13C3, CPT)

A1C.1.4. **Applicability.** This variance is applicable where the Officer Training Program is located. Currently this variance applies to Shaw AFB and Tyndall AFB.

A1C.2. **Title.** Positive Mission Variance for Air Traffic Control Liaison.

A1C.2.1. **Definition**. One officer and three Senior NCOs are required to provide managerial and technical advice to the 432nd Fighter Wing on ATC matters. They assist Japan Air Self Defense Force (JASDF) and Japanese civilian agencies in establishing ATC procedures to ensure flight safety for the United States Forces Japan (USFJ), JASDF, and civilian aircraft. Coordinates base ATC procedures with JASDF, 5th Air Force, and HQ PACAF. Provides actual operational assistance to the JASDF controllers during USFJ flying periods.

A1C.2.2. **Rationale.** This variance is an approved Air Force variance for support of the Air Traffic Control Liaison program. Although this variance may apply to limited locations, the Air Staff OPR has designated this as an Air Force variance.

A1C.2.3. **Impact.** + 4 manpower requirements (+1 AFSC 13B3A CPT and +3 AFSC 1C171 MSG manpower requirements)

A1C.2.4. **Applicability.** Misawa AB.

A1C.3. **Title.** Positive Mission Variance for Presidential Support Responsibilities.

A1C.3.1. **Definition.** The liaison positions support safe, reliable, and comfortable worldwide airlift for the President, Vice President, cabinet members, congressional leaders, and other high- ranking dignitaries of the US and foreign governments. In addition, the liaison supports the 459 AW (AFRES), 113TFW (ANG), 457 AS Det 1, HQ District of Columbia Air National Guard, Marine Aircraft Group 41, Detachment A, and the Naval Air Facility.

A1C.3.2. **Rationale.** This variance is an approved Air Force variance for support of Air Traffic Control Liaison program for the President, Vice President, cabinet members, congressional leaders, and other high ranking dignitaries of the US and foreign governments. Although this variance may apply to limited locations, the Air Staff OPR has designated this as an Air Force variance.

A1C.3.3. **Impact.** + 2 manpower requirements (+1 AFSC 13B4 MAJ and +1 1C171 MSG manpower requirements)

A1C.3.4. **Applicability.** Andrews AFB.

A1C.4. **Title.** Positive Mission Variance for Air Force Flight Test Center (AFFTC) Complex Control Board (CCB) Member Responsibilities.

A1C.4.1. **Definition.** The mission of the CCB is to supervise the management of the Restricted Area R-2508 Complex. The CCB advises the Joint Policy and Planning Board (JPPB), which consists of the commanders of AFFTC, Navy Air Warfare Center China Lake, and National Training Center Fort Irwin. As a member of the CCB, responsibilities include: (1) Airspace Management; (2) establish policies for Complex user operations; (3) formulate a unified position on airspace matters of mutual interest; (4) ensure proper utilization and maximum availability of airspace for all users; (5) management of the Complex Operations and Maintenance and Improvement and Modernization budgets; (6) inform the JPPB on major issues relevant to management of the Complex.

A1C.4.2. **Rationale.** This variance is an approved Air Force variance for support of CCB to supervise the management of the Restricted Area R-2508 Complex. The CCB advises the Joint Policy and Planning Board (JPPB), which consists of the commanders of AFFTC, Navy Air Warfare Center China Lake, and National Training Center Fort Irwin. Although this variance may apply to limited locations, the Air Staff OPR has designated this as an Air Force variance.

A1C.4.3. **Impact.** + 1 manpower requirement (+1 AFSC 13B4 LTC manpower requirement)

A1C.4.4. **Applicability.** Edwards AFB

A1C.5. **Title.** Positive Environment Variance for Interpreter.

A1C.5.1. **Definition.** This variance provides additional manpower at Incirlik AB and Aviano AB where requirements exist to interface with host nation military and civilian counterparts not fluent in English.

A1C.5.2. **Rationale.** This variance is an approved Air Force variance for support of Air Traffic Control through an interpreter. This interpreter serves as a link between U.S. air traffic controllers and host nation military and civilian counterparts not fluent in English. Although this variance may apply to limited locations, the Air Staff OPR has designated this as an Air Force variance.

A1C.5.3. **Impact.** + 3 manpower requirements (+3 AFSC 1N335E civilian manpower requirements) - Incirlik
+ 1 manpower requirements (+1 AFSC 1N335E civilian manpower requirements) - Aviano

A1C.5.4. **Applicability.** Incirlik AB and Aviano AB.

A1C.6. **Title.** Positive Mission Variance for ATC Automation Specialists.

A1C.6.1. **Definition.** This variance provides for additional manpower to operate and manage the Micro-Enroute Automated Radar Tracking System (Micro-EARTS). Staffing requirements will be three Automation Specialists (AFSC G1C151) and one Automation Chief (G1C171). Positions provide technical support to resolve software problems and make software updates at installations.

A1C.6.2. **Rationale.** This variance is an approved Air Force variance for support of the Micro-EARTS radar system. Although this variance may apply to limited locations, the Air Staff OPR has designated this as an Air Force variance.

A1C.6.3. **Impact.** +4 manpower requirements (+1 AFSC G1C171 and +3 AFSC G1C151 manpower requirements)

A1C.6.4. **Applicability.** This variance is applicable at Micro-EARTS sites. Currently the variance applies to Nellis AFB, White Sands Missile Range, and Shaw AFB.

A1C. 7. **Title.** Positive Mission Variance for Air Traffic Controller Qualification Program.

A1C.7.1. **Definition.** This variance includes 3-level enlisted trainee authorizations (AFSC 1C131) specifically allocated for on-the-job training (OJT) for personnel on initial assignment from technical training (formerly

FAC 381900). It does not apply to enlisted members undergoing additional certification and rating training or upgrade training to the journeyman, craftsman, and superintendent skill levels.

A1C.7.2. **Impact.** Varies by location. All positions will be allocated as "3-level, AFSC 1C131, A1C authorizations only."

Command	Base	Tower	Radar
ACC	Barksdale	2	
	Beal	2	
	Cannon	3	8
	Davis Monthan	2	
	Dyess	2	
	Ellsworth	2	6
	Holloman	4	9
	Langley	2	
	Little Rock	3	4
	Minot	3	5
	Moody	3	8
	Mt. Home	3	8
	Nellis	4	10
	Offutt	2	
	Pope	2	
	Seymour Johnson	4	9
	Shaw	3	8
	Whiteman	3	8
AETC	Altus	2	10
	Columbus		11
	Laughlin		12
	Luke	4	8
	Sheppard		12
	Vance		12
AFMC	Edwards	3	
	Eglin	3	5
	Hill	2	
	Kelly	3	
	McClellan	1	
	Robbins	2	
	Tinker	3	
	Wright-Patterson	2	
AMC	Dover	4	7
	Fairchild	4	
	Grand Forks	4	8
	McChord	4	
	McConnell	4	

Command	**Base**	**Tower**	**Radar**
AMC	McGuire	4	8
	Scott	4	
	Travis	4	8
AFSPC	Patrick		4
PACAF	Elmendorf	2	
USAFE	Lakenheath		1
	Ramstein		2
	Spangdahlem		1

A1C.7.3. **Applicability.** Data provided by HQ AFPC/DPAAD4, AFFSA/XATF, and all MAJCOM functional representatives. Total 3 level authorizations is 300.

CONTROL TOWER OPERATIONS ELEMENT

The Control Tower Operations Element is responsible for providing air traffic control operations to the installation's flying wing, transient, and civilian airfield and air traffic users. This element defines the manpower allowed to support an objective wing Airfield Operations (AO) Flight at Air Mobility Command, Air Combat Command, US Air Forces Europe, Air Force Materiel Command, Air Education and Training Command, Air Force Space Command, Air Force Special Operations Command, and Pacific Air Forces bases. It does not apply to Air National Guard and Air Force Reserve bases. This element does not apply to flights that have been cost compared (OMB Circular A-76). This element does not apply to locations on the base closure list. It applies to peacetime operations only. AFI 13-203 and AFI 13-213 contain USAF policy and procedural guidance for the AO Flight. This element has been developed in accordance with policy and guidance from HQ USAF/PER, AFCQMI, AFI 38-201, and AFMAN 38-208.

A2.1. Core Composition:

A2.1.1. **Core Manpower Requirement.** 14

A2.1.2. **Core Manpower Range.** 6 - 22

A2.1.3. **Programming Factor. Position Manning.**

A2.2. Standard Data:

A2.2.1. **Approval Date.** 7 January 1997

A2.2.2. **Man-hour Data Source.** Workshop measurement and historical documents.

A2.2.3. **Man-hour Equation.**
Y = 160.7 + 28.262(X1)(X2) Weekdays
Y = 8.783(X1)(X2) Weekends
Thule: Y = 2
Chievres: Y=5

A2.2.4. **Workload Factor:**
A2.2.4.1. **Title.** A Required Position.
A2.2.4.2. **Definition.** A control tower position required to be manned in the tower. The positions required to be manned in the tower are Watch Supervisor, Ground Control, Flight Data, and Local 1. There are two positions that are manned based on the size and complexity of the tower, Local 2, and Coordinator. At limited locations, a Clearance Delivery position is required.
A2.2.4.3. **Source.** Command Supplement to AFI 13-203. Each MAJCOM must spell out in a command supplement to AFI 13-203, a breakout by base of the positions required to be manned at each control tower.
A2.2.4.4. **Title.** Hours of Operations for Position Manned.
A2.2.4.5. **Definition.** A control tower hours of operation for each position required to be manned in the tower. Obtain the hours of operation for each position required to be manned in the tower by the Watch Supervisor, Ground Control, Flight Data, or Local 1. There are two positions that are manned based on the size and complexity of the tower: Local 2 and Coordinator. At limited locations, a Clearance Delivery position is required.
A2.2.4.6. **Source.** Command Supplement to AFI 13-203. Each MAJCOM must have a command supplement to AFI 13-203. This supplement will have a breakout by base of the hours a position is required to be manned at each control tower.

A2.2.5. **Points of Contact:**
A2.2.5.1. **AFCQMI Representatives.** MSgt Geno Brabham and SSgt Pete Corey, AFCQMI/MQAA.
A2.2.5.2. **Functional Representative.** CMSgt Coney and SMSgt Robert James, AFFSA/XATF.

A2.3. Application Instructions:

A2.3.1. **Step 1.** Determine the core manpower by using the man-hour equation in paragraph A2.2.3 above. Obtain the number of positions required to work weekdays. For each position required to work on the weekday, obtain the number of hours the position is required to be open. Do this for each position required to have manning available during the weekday. Obtain the number of positions required to work weekends. For each position required to work on the weekends obtain the number of hours the position is required to be open. Do this for each position required to have manning available during the weekend. Do not count the Chief Controller.

A2.3.2. **Step 2.** For Weekdays: Use the man-hour equation in paragraph A2.2.3 above and multiply each position and the hours that position is required to be open on the weekdays by the equation coefficient. For Weekends: Use the man-hour equation in paragraph A2.2.3 above and multiply each position and the hours that position is required to be open on the weekends by the equation coefficient.

A2.3.3. **Step 3.** Sum the manpower earned for each position. Then add the hours in the "a" (160.7). For more assistance see the Application Worksheet at Appendix D. (***Note:*** The "a" value is the credit for the Chief Controller (CCTLR) position.)

A2.3.4. **Step 4.** Determine manpower requirements by dividing by the appropriate man-hour availability factor (MAF). ***Note:*** If your installation has only a control tower and/or an Airfield Management element, continue with paragraph A2.3.5 below. If not, go to paragraph A2.3.7.

A2.3.5. **Step 5.** Determine variance manpower by using Appendix C, Variances.

A2.3.6. **Step 6.** Add together the manpower earned from paragraphs A2.3.1 through A2.3.5 above. Skip paragraph A2.3.7. and go to paragraphs A2.3.8. and A2.3.9 below.

A2.3.7. **Step 7.** If your installation has more than one ATC facility, you must apply all equations before rounding up. You must aggregate (total) the fractional man-hours for these functions before dividing by the appropriate MAF. After dividing by the appropriate MAF, determine the variance manpower for each applicable element and add this to the manpower total. Then round using the appropriate rounding rule.

A2.3.8. **Step 8.** For an example or more guidance on application of this element, see Appendix D, Application Worksheet.

A2.3.9. **Step 9.** Determine skill and grade distribution using the manpower table in Appendix B. The highest skill/grade authorization is for the CCTLR.

A2.4. Statement of Conditions/Assumptions:

A2.4.1. **Flight Core Hours of Operation.** Normal flight core hours of operation are established by the MAJCOM in conjunction with the local wing commanders. Normal base flying operations are established by the wing commander. This manpower standard provides manning for extended flying hours for both weekdays and weekends.

A2.4.2. **Air Traffic Controller Qualification Program.** Federal Aviation Regulations and flying safety dictate that air traffic controllers do not work in a position alone until they obtain minimum qualifications. Personnel on initial assignment from technical training are assigned to FAC 13E125 and work in the Control Tower or Radar facility until they obtain certifications and ratings required by AFI 13-203 to become a qualified controller. After becoming qualified, they are assigned to the Control Tower or Radar facility FAC as appropriate. The number of

personnel allocated for FAC 13E125 is determined by the annual Trained Personnel Requirement (TPR). The functional manager for AFSC 1C1X1, HQ AFPC/DPAAD4, coordinates with MAJCOM functional managers, determines allocations for each base, and advises AFCQMI of necessary adjustments to the AFMS.

Appendices
A - Process Oriented Description
B - Manpower Table
C - Variances
D - Application Worksheet

PROCESS ORIENTED DESCRIPTION

CONTROL TOWER OPERATIONS ELEMENT

A2A.1. PROVIDES LOCAL CONTROL:
A2A.1.1. PROVIDES AERODROME SURVEILLANCE.
A2A.1.2. PROVIDES AIRPORT AIRSPACE SURVEILLANCE.
A2A.1.3. CONTROLS ARRIVING AIRCRAFT.
A2A.1.4. CONTROLS DEPARTING AIRCRAFT.
A2A.1.5. CONTROLS OVERFLIGHT AIRCRAFT.
A2A.1.6. CONTROLS RUNWAY ACCESS.
A2A.1.7. PROVIDES ADVISORIES.
A2A.1.8. MAINTAINS OPERATIONS COUNT.
A2A.1.9. PROVIDES COORDINATION.

A2A.2. PROVIDES GROUND CONTROL:
A2A.2.1. PROVIDES AERODROME SURVEILLANCE.
A2A.2.2. CONTROLS TAXIING AIRCRAFT.
A2A.2.3. MONITORS/CONTROLS GROUND ACTIVITY.
A2A.2.4. PROVIDES ADVISORIES.
A2A.2.5. PROVIDES CLEARANCE DELIVERY.
A2A.2.6. PROVIDES COORDINATION.

A2A.3. PROVIDES FLIGHT DATA SERVICE:
A2A.3.1. RECEIVES AND DISTRIBUTES FLIGHT PLAN INFORMATION.
A2A.3.2. PROVIDES COORDINATION.

A2A.4. PROVIDES WATCH SUPERVISOR/SENIOR CONTROLLER SHIFT ACTIVITY CONTROL:
A2A.4.1. OVERSEES AND DIRECTS FACILITY OPERATION.
A2A.4.2. OPERATES/MONITORS EQUIPMENT.
A2A.4.3. MAINTAINS LOGS/FORMS.
A2A.4.4. PREPARES/CONDUCTS PREDUTY BRIEFING.
A2A.4.5. PROVIDES COORDINATION.

A2A.5. PROVIDES COORDINATOR SERVICE.

A2A.6. APPLIES CREW RESOURCE MANAGEMENT.

A2A.7. EQUIPMENT OPERATION:
A2A.7.1. OPERATES AND MONITORS EQUIPMENT.
A2A.7.2. PERFORMS EQUIPMENT CHECKS.
A2A.7.3. VERIFIES EQUIPMENT STATUS.

A2A.8. FACILITY/POSITION CERTIFICATION AND TRAINING:
A2A.8.1. PREPARES TRAINING.
A2A.8.2. CONDUCTS TRAINING.
A2A.8.3. RECEIVES TRAINING.

A2A.9. PROVIDES WEATHER SUPPORT.

INDIRECT. Indirect work involves those tasks that are not readily identifiable with the work center's specific product or service. The major categories of standard indirect work are Supervision, Administration, Meetings, Training, Supply, Equipment Maintenance, and Cleanup. See AFMS 00AA for the Standard Indirect Description.

STANDARD MANPOWER TABLE

WORK CENTER/FAC	**APPLICABILITY MAN-HOUR RANGE**
Control Tower/FAC 13E1	964.20 - 3535.40

AIR FORCE SPECIALTY TITLE	**AFSC**	**GRADE**	**MANPOWER REQUIREMENT**								
Air Traffic Control Supt	1C191	SMS							1	1	1
Air Traffic Control Crftmn	1C171	MSG	1	1	1	1	1	1	1	1	1
Air Traffic Control Crftmn	1C171	TSG	3	3	4	4	5	5	5	5	5
Air Traffic Control Jrnymn	1C151	SSG	1	1	1	2	2	2	2	2	3
Air Traffic Control Jrnymn	1C151	SRA	1	2	2	2	2	3	3	4	4
TOTAL			6	7	8	9	10	11	12	13	14

AIR FORCE SPECIALTY TITLE	**AFSC**	**GRADE**	**MANPOWER REQUIREMENT**								
Air Traffic Control Mgr	1C100	CMS				1	1	1	1	1	
Air Traffic Control Supt	1C191	SMS	1	1	1						
Air Traffic Control Crftmn	1C171	MSG	1	2	2	3	3	4	4	4	
Air Traffic Control Crftmn	1C171	TSG	5	5	5	5	5	5	5	5	
Air Traffic Control Jrnymn	1C151	SSG	4	4	4	4	5	5	5	5	
Air Traffic Control Jrnymn	1C151	SRA	4	4	5	5	5	5	6	7	
TOTAL			15	16	17	18	19	20	21	22	

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VARIANCES

CONTROL TOWER OPERATIONS ELEMENT

SUMMARY

VARIANCE NUMBER	**TITLE**
A2C.	Positive Mission Variance for NATO ZULU Alert Commitment.

VARIANCES

CONTROL TOWER OPERATIONS ELEMENT

DETAIL

A2C.1. **Title.** Positive Mission Variance for NATO ZULU Alert Commitment.

A2C.2. **Definition.** This variance provides for additional manpower to support the recurring NATO ZULU Alert commitment at a geographically separated location.

A2C.3. **Rationale.** This variance is an approved Air Force variance for support of the NATO mission. Although this variance may apply to limited locations, the Air Staff OPR has designated this as an Air Force variance.

A2C.4. **Impact.** +1 manpower requirements (+1 AFSC 1C171 manpower requirement)

A2C.5 **Applicability.** Spangdahlem AB

APPLICATION WORKSHEET

CONTROL TOWER OPERATIONS ELEMENT

A2D.1. The following application worksheet can be used in pricing AFMS 13E1, Control Tower Operations Element, Radar Approach Control (RAPCON), Radar Final Control (RFC), and Ground Controlled Approach (GCA).

A2D.2. The application of Control Tower, RAPCON, RFC, and GCA will be the same. Each of these elements uses position manning to determine manpower. The following example is one of the more complex application situations.

Example:

Step 1. An installation has 4 positions in the control tower. NOTE: Positions do not relate to authorizations or personnel. A position is a required station where an individual must be available to fill at a moments notice. Those positions work the following hours.

Weekdays
- 4 positions for 10 hours (0600 - 1600)
- 4 positions for 8 hours (1600 - 2400)
- 3 positions for 6 hours (2400 - 0600)

Weekends
- 2 positions for 12 hours (0600 - 1800)
- 2 positions for 8 hours (1800 - 0200)

The equation for the control tower is as follows.

Weekdays $Y = 160.7 + 28.262(X1)(X2)$

Weekends $Y = 8.783(X1)(X2)$

The priceout is as follows:

WEEKDAYS	PRICEOUT	SUMMARY
4 positions for 10 hours (0600 - 1600)	28.262 (4) (10) = 1130.48	1130.48
4 positions for 8 hours (1600 - 2400)	28.262 (4) (8) = 904.38	904.38
3 positions for 6 hours (2400 - 0600)	28.262 (3) (6) = 508.72	508.72
TOTAL		2543.58

WEEKEND	PRICEOUT	SUMMARY
2 positions for 12 hours (0600 - 1800)	8.783 (2) (12) = 210.79	210.79
2 positions for 8 hours (1800 - 0200)	8.783 (2) (8) = 140.53	140.53
TOTAL		351.32

Step 2. Now that you have calculated the man-hours required for each position, add these hours together.

Weekday: Y = 160.7 + 2543.58

Weekend: Y = 351.32

Step 3. Add the weekday and the weekend man-hours and divide by the appropriate MAF.

Weekday: Y = 2704.28

Weekend: Y = 351.32

Total 3055.60/160.7 = 19.01 Manpower spaces.

Step 4. Determine the variances applicable to your installation and add them to the fractional manpower earned in Step 3.

Step 5. If you have a RAPCON, GCA or RFC, calculate the manpower required for those elements of Air Traffic Control. Once you have done that, add together the fractional manpower required for each applicable element and then use the appropriate rounding rule. Do not round up until you have calculated all the manpower earned in the control tower, RAPCON, GCA, and RFC.

RADAR APPROACH CONTROL (RAPCON) ELEMENT

The RAPCON Element is responsible for providing air traffic control radar operations to the installation's flying wing, transient, and civilian airfield and air traffic users. This element defines the manpower allowed to support an objective wing Airfield Operations (AO) Flight at Air Mobility Command, Air Combat Command, US Air Forces Europe, Air Force Materiel Command, Air Education and Training Command, Air Force Space Command, Air Force Special Operations Command, and Pacific Air Forces bases. It does not apply to Air National Guard and Air Force Reserve bases. This element does not apply to flights that have been cost compared (OMB Circular A-76). This element does not apply to locations on the base closure list. It applies to peacetime operations only. AFI 13-203 and AFI 13-213 contain USAF policy and procedural guidance for the AO Flight. This element has been developed in accordance with policy and guidance from HQ USAF/PER, AFCQMI, AFI 38-201, and AFMAN 38-208.

A3.1. Core Composition:

A3.1.1. **Core Manpower Requirement.** 19

A3.1.2. **Core Manpower Range.** 9 - 76

A3.1.3. **Programming Factor.** Position Manning.

A3.2. Standard Data:

A3.2.1. **Approval Date.** 7 January 1997

A3.2.2. **Man-hour Data Source.** Workshop measurement and historical documents.

A3.2.3. **Man-hour Equation.**
$Y = 160.7 + 28.262(X1)(X2)$ Weekdays
$Y = 8.783(X1)(X2)$ Weekends
Thule : $Y = 5$

A3.2.4. **Workload Factor:**
A3.2.4.1. **Title.** A Required Position.
A3.2.4.2. **Definition.** A RAPCON position required to be manned in the RAPCON. The positions are required to be manned when the RAPCON is active.
A3.2.4.3. **Source.** Command Supplement to AFI 13-203. Each MAJCOM must spell-out in a command supplement to AFI 13-203, a breakout by base of the positions required to be manned at each RAPCON.
A3.2.4.4. **Title.** Hours of Operation for Position Manned.
A3.2.4.5. **Definition.** The hours of operation for each position required to be manned in the RAPCON. Obtain the hours of operation for each position required to be manned in the RAPCON during a shift.
A3.2.4.6. **Source.** Command Supplement to AFI 13-203. Each MAJCOM must have a command supplement to AFI 13-203. This supplement will have a breakout by base of the hours a position's required to be manned at each RAPCON.

A3.2.5. **Points of Contact:**
A3.2.5.1. **AFCQMI Representatives.** MSgt Geno Brabham and SSgt Pete Corey, AFCQMI/MQAA.
A3.2.5.2. **Functional Representative.** CMSgt Coney and SMSgt Robert James, AFFSA/XATF.

A3.3. Application Instructions:

A3.3.1. **Step 1.** Determine the core manpower by using the man-hour equation in paragraph A3.2.3 above. Obtain the number of positions required to work weekdays. For each position required to work on the weekday, obtain the number of hours the position is required to be open. Do this for each position required to have manning available during the weekday. Obtain the number of positions required to work weekends. For each position required to work

on the weekends, obtain the number of hours the position is required to be open. Do this for each position required to have manning available during the weekend. Do not count the Chief Controller.

A3.3.2. **Step 2.** For Weekdays: Use the man-hour equation in paragraph A3.2.3 above and multiply each position and the hours that position is required to be open on the weekdays by the equation coefficient. For Weekends: Use the man-hour equation in paragraph A3.2.3 above and multiply each position and the hours that position is required to be open on the weekends by the equation coefficient.

A3.3.3. **Step 3.** Determine manpower requirements by dividing by the appropriate man-hour availability factor (MAF). ***Note:*** If your installation has only a RAPCON and/or an Airfield Management element, continue with paragraph A3.3.4. below. If not, go to paragraph A3.3.6 below.

A3.3.4. **Step 4.** Determine variance manpower by using the variance at Appendix C, Variances.

A3.3.5. **Step 5.** Add the manpower earned from paragraphs A3.3.1 through A3.3.4 above. Skip paragraph A3.3.6. below and go to paragraphs A3.3.7 and A3.3.8 below.

A3.3.6. **Step 6.** If your installation has more than one ATC facility, you must apply all equations before rounding up. You must aggregate (total) the fractional man-hours for these functions before dividing by the appropriate MAF. After dividing by the appropriate MAF, determine the variance manpower for each applicable element and add this to the manpower total. Then round using the appropriate rounding rule.

A3.3.7. **Step 7.** For an example or more guidance on application of this element, see Appendix D, Application Worksheet.

A3.3.8. **Step 8.** Determine skill and grade distribution using the manpower table, Appendix B. ***Note:*** The highest skill/grade authorization is for the CCTLR.

A3.4. Statement of Conditions/Assumptions:

A3.4.1. **Flight Core Hours of Operation.** Normal flight core hours of operation are established by the MAJCOM in conjunction with the local wing commanders. Normal base flying operations are established by the wing commander. This manpower element provides manning for extended flying hours both on weekdays and weekends.

A3.4.2. **Air Traffic Controller Qualification Program.** Federal Aviation Regulations and flying safety dictate that air traffic controllers do not work in a position alone until they obtain minimum qualifications. Personnel on initial assignment from technical training are assigned to FAC 13E125 and work in the Control Tower or Radar facility until they obtain certifications and ratings required by AFI 13-203 to become a qualified controller. After becoming qualified, they are assigned to the Control Tower or Radar FAC as appropriate. The number of personnel allocated for FAC 13E125 is determined by the annual Trained Personnel Requirement (TPR). The functional manager for AFSC 1C1X1, HQ AFPC/DPAAD4, coordinates with MAJCOM functional managers, determines allocations for each base, and advises AFCQMI of necessary adjustments to the AFMS.

Appendices
A - Process Oriented Description
B - Manpower Table
C - Variances
D - Application Worksheet

PROCESS ORIENTED DESCRIPTION

RAPCON ELEMENT

A3A.1. PROVIDES APPROACH CONTROL:
A3A.1.1. APPLIES RADAR/NONRADAR SEPARATION.
A3A.1.2. PROVIDES RADAR, ADVISORY, AND EMERGENCY AND SPECIAL HANDLING SERVICE.
A3A.1.3. ISSUES CLEARANCES.
A3A.1.4. PROVIDES COORDINATION.
A3A.1.5. ISSUES APPROACH AND LANDING INFORMATION.

A3A.2. PROVIDES ARRIVAL CONTROL:
A3A.2.1. APPLIES RADAR/NONRADAR SEPARATION.
A3A.2.2. PROVIDES RADAR, ADVISORY, AND EMERGENCY AND SPECIAL HANDLING SERVICE.
A3A.2.3. ISSUES CLEARANCES.
A3A.2.4. PROVIDES COORDINATION.
A3A.2.5. ISSUES APPROACH AND LANDING INFORMATION.

A3A.3. PROVIDES DEPARTURE CONTROL:
A3A.3.1. APPLIES RADAR/NONRADAR SEPARATION.
A3A.3.2. PROVIDES RADAR, ADVISORY, AND EMERGENCY AND SPECIAL HANDLING SERVICE.
A3A.3.3. ISSUES CLEARANCES/RELEASES.
A3A.3.4. PROVIDES COORDINATION.

A3A.4. PROVIDES RADAR FINAL CONTROL:
A3A.4.1. PROVIDES RADAR GUIDANCE/MONITORING AND SEPARATION.
A3A.4.2. PROVIDES RADAR, ADVISORY, AND EMERGENCY AND SPECIAL HANDLING SERVICE.
A3A.4.3. PROVIDES COORDINATION.
A3A.4.4. ISSUES CLEARANCE AND LANDING INFORMATION.
A3A.4.5. ISSUES BREAKOUT/GO-AROUND INSTRUCTIONS.

A3A.5. PROVIDES ASSISTANT CONTROL:
A3A.5.1. MAINTAINS FLIGHT PROGRESS STRIPS.
A3A.5.2. PROVIDES COORDINATION.
A3A.5.3. MAINTAINS WEATHER INFORMATION.

A3A.6. PROVIDES FLOW COORDINATION.

A3A.7. PROVIDES INTER-FACILITY COORDINATOR SERVICE.

A3A.8. PROVIDES FLIGHT DATA SERVICE:
A3A.8.1. RECEIVES AND DISTRIBUTES FLIGHT PLAN INFORMATION.
A3A.8.2. PROVIDES COORDINATION.

A3A.9. PROVIDES CLEARANCE DELIVERY:
A3A.9.1. COPIES AND RELAYS CLEARANCES.
A3A.9.2. COORDINATES FLIGHT PLAN INFORMATION.

A3A.10. PROVIDES WATCH SUPERVISOR/SENIOR CONTROLLER SHIFT ACTIVITY CONTROL.
A3A.10.1. OVERSEES AND DIRECTS FACILITY OPERATION.
A3A.10.2. MONITORS AND UPDATES FACILITY STATUS INFORMATION.
A3A.10.3. MAINTAINS LOGS/FORMS.
A3A.10.4. PREPARES/CONDUCTS PREDUTY BRIEFING.
A3A.10.5. PROVIDES COORDINATION.

A3A.11. FACILITY/POSITION CERTIFICATION AND TRAINING:
A3A.11.1. PREPARES TRAINING.
A3A.11.2. CONDUCTS TRAINING.
A3A.11.3. RECEIVES TRAINING.

A3A.12. EQUIPMENT OPERATION AND MAINTENANCE:
A3A.12.1. OPERATES AND MONITORS EQUIPMENT.
A3A.12.2. PERFORMS EQUIPMENT CHECKS.
A3A.12.3. VERIFIES EQUIPMENT STATUS.

A3A.13. APPLIES CREW RESOURCE MANAGEMENT.

A3A.14. PROVIDES SPECIAL USE AIR SPACE SERVICE.

INDIRECT. Indirect work involves those tasks that are not readily identifiable with the work center's specific product or service. The major categories of standard indirect work are Supervision, Administration, Meetings, Training, Supply, Equipment Maintenance, and Cleanup. See AFMS 00AA for the Standard Indirect Description.

STANDARD MANPOWER TABLE

WORK CENTER/FAC	**APPLICABILITY MAN-HOUR RANGE**
Radar Approach Control (RAPCON)/13E1	1446.30 - 12213.2

AIR FORCE SPECIALTY TITLE	**AFSC**	**GRADE**	**MANPOWER REQUIREMENT**								
Air Traffic Control Mgr	1C100	CMS								1	1
Air Traffic Control Supt	1C191	SMS	1	1	1	1	1	1	1	1	1
Air Traffic Control Crftmn	1C171	MSG	2	2	2	2	2	2	2	2	2
Air Traffic Control Crftmn	1C171	TSG	2	2	2	3	3	3	4	4	4
Air Traffic Control Jrnymn	1C151	SSG	2	2	3	3	3	4	4	4	4
Air Traffic Control Jrnymn	1C151	SRA	2	3	3	3	4	4	4	4	5
TOTAL			9	10	11	12	13	14	15	16	17

AIR FORCE SPECIALTY TITLE	**AFSC**	**GRADE**	**MANPOWER REQUIREMENT**								
Air Traffic Control Mgr	1C100	CMS	1	1	1	1	1	1	1	1	1
Air Traffic Control Supt	1C191	SMS	1	1	1	1	1	1	1	1	1
Air Traffic Control Crftmn	1C171	MSG	2	2	3	3	3	3	3	3	3
Air Traffic Control Crftmn	1C171	TSG	4	4	4	4	4	4	4	5	5
Air Traffic Control Jrnymn	1C151	SSG	5	5	5	6	6	7	7	7	8
Air Traffic Control Jrnymn	1C151	SRA	5	6	6	6	7	7	8	8	8
TOTAL			18	19	20	21	22	23	24	25	26

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STANDARD MANPOWER TABLE

WORK CENTER/FAC	**APPLICABILITY MAN-HOUR RANGE**
Radar Approach Control (RAPCON)/13E1	1446.30 - 12213.2

AIR FORCE SPECIALTY TITLE	**AFSC**	**GRADE**	**MANPOWER REQUIREMENT**								
Air Traffic Control Mgr	1C100	CMS	1	1	1	1	1	1	1	1	1
Air Traffic Control Supt	1C191	SMS	1	1	1	1	1	1	1	1	1
Air Traffic Control Crftmn	1C171	MSG	3	3	3	4	4	4	4	4	4
Air Traffic Control Crftmn	1C171	TSG	5	5	5	5	5	5	5	5	6
Air Traffic Control Jrnymn	1C151	SSG	8	9	9	9	10	10	11	11	11
Air Traffic Control Jrnymn	1C151	SRA	9	9	10	10	10	11	11	12	12
TOTAL			27	28	29	30	31	32	33	34	35

AIR FORCE SPECIALTY TITLE	**AFSC**	**GRADE**	**MANPOWER REQUIREMENT**								
Air Traffic Control Mgr	1C100	CMS	1	1	1	1	1	1	1	1	1
Air Traffic Control Supt	1C191	SMS	1	1	1	1	1	1	1	1	1
Air Traffic Control Crftmn	1C171	MSG	4	4	4	4	4	4	5	5	5
Air Traffic Control Crftmn	1C171	TSG	6	6	6	7	7	7	7	7	7
Air Traffic Control Jrnymn	1C151	SSG	12	12	13	13	13	14	14	14	15
Air Traffic Control Jrnymn	1C151	SRA	12	13	13	13	14	14	14	15	15
TOTAL			36	37	38	39	40	41	42	43	44

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STANDARD MANPOWER TABLE

WORK CENTER/FAC	**APPLICABILITY MAN-HOUR RANGE**
Radar Approach Control (RAPCON)/13E1	1446.30 - 12213.2

AIR FORCE SPECIALTY TITLE	**AFSC**	**GRADE**	**MANPOWER REQUIREMENT**								
Air Traffic Control Mgr	1C100	CMS	1	1	1	1	1	1	1	1	1
Air Traffic Control Supt	1C191	SMS	1	1	1	1	1	1	1	1	1
Air Traffic Control Crftmn	1C171	MSG	5	5	5	5	5	5	5	5	5
Air Traffic Control Crftmn	1C171	TSG	7	7	7	8	8	8	8	8	8
Air Traffic Control Jrnymn	1C151	SSG	15	16	16	16	17	17	18	18	19
Air Traffic Control Jrnymn	1C151	SRA	16	16	17	17	17	18	18	19	19
TOTAL			45	46	47	48	49	50	51	52	53

AIR FORCE SPECIALTY TITLE	**AFSC**	**GRADE**	**MANPOWER REQUIREMENT**								
Air Traffic Control Mgr	1C100	CMS	1	1	1	1	1	1	1	1	1
Air Traffic Control Supt	1C191	SMS	1	1	1	1	1	1	1	1	1
Air Traffic Control Crftmn	1C171	MSG	6	6	6	6	6	6	6	6	6
Air Traffic Control Crftmn	1C171	TSG	8	8	8	8	9	9	9	9	9
Air Traffic Control Jrnymn	1C151	SSG	19	19	20	20	20	21	21	22	22
Air Traffic Control Jrnymn	1C151	SRA	19	20	20	21	21	21	22	22	23
TOTAL			54	55	56	57	58	59	60	61	62

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STANDARD MANPOWER TABLE

WORK CENTER/FAC	**APPLICABILITY MAN-HOUR RANGE**
Radar Approach Control (RAPCON)/13E1	1446.30 - 12213.2

AIR FORCE SPECIALTY TITLE	**AFSC**	**GRADE**	**MANPOWER REQUIREMENT**								
Air Traffic Control Mgr	1C100	CMS	1	1	1	1	1	1	1	1	1
Air Traffic Control Supt	1C191	SMS	1	1	1	1	1	1	2	2	2
Air Traffic Control Crftmn	1C171	MSG	6	6	6	6	6	7	7	7	7
Air Traffic Control Crftmn	1C171	TSG	10	10	10	10	10	10	10	10	10
Air Traffic Control Jrnymn	1C151	SSG	22	23	23	24	24	24	24	25	25
Air Traffic Control Jrnymn	1C151	SRA	23	23	24	24	25	25	25	25	26
TOTAL			63	64	65	66	67	68	69	70	71

AIR FORCE SPECIALTY TITLE	**AFSC**	**GRADE**	**MANPOWER REQUIREMENT**								
Air Traffic Control Mgr	1C100	CMS	1	1	1	1	1				
Air Traffic Control Supt	1C191	SMS	2	2	2	2	2				
Air Traffic Control Crftmn	1C171	MSG	7	7	7	7	7				
Air Traffic Control Crftmn	1C171	TSG	10	11	11	11	11				
Air Traffic Control Jrnymn	1C151	SSG	26	26	26	27	27				
Air Traffic Control Jrnymn	1C151	SRA	26	26	27	27	28				
TOTAL			72	73	74	75	76				

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VARIANCES

RAPCON ELEMENT

SUMMARY

VARIANCE NUMBER	TITLE
A3C.	Positive Environmental Variance for Remote/Short Tour Locations

VARIANCES

RAPCON ELEMENT

DETAIL

A3C.1. **Title.** Positive Environmental Variance for Remote/Short Tour Locations.

A3C.2. **Definition.** This variance provides for additional certification/facility rating training time for short-tour locations. The Radar Operations Element of this standard was designed in a manner to provide credit for the peak number of positions utilized during the measurement period. It assumes that the large number of hours expended in RAPCON certification training can be absorbed in the time that positions are not fully utilized. In most cases the man-hours credited by the standard (peak utilization) exceed the sum of average position utilization and certification training workload. Exceptions to this rule are the short-tour locations that have significantly more training workload because of the quick turnover.

A3C.3. **Rationale.** Due to the shortness of tours for Osan AB and Kunsan AB, an extensive training program is required to train controllers on local area situations. The current standard allows for a training factor of 1.5 hours in the Directed Requirement Factor (DRF). For Osan AB and Kunsan AB a training factor of 3 hours was used. The difference between the training factor of 1.5 hours and 3 hours are the spaces earned in this variance.

A3C.4. **Impact.** (+8 manpower requirements)-Osan AB
(+6 manpower requirements)-Kunsan AB

A3C.5. **Applicability.** This variance applies to bases with an overseas extended man-hour availability factor (Osan and Kunsan ABs) radar facilities.

APPLICATION WORKSHEET

RAPCON ELEMENT

A3D.1. The following application worksheet can be used in pricing AFMS 13E1, Control Tower Operations Element, Radar Approach Control (RAPCON), Radar Final Control (RFC), and Ground Controlled Approach (GCA).

A3D.2. The application of Control Tower, RAPCON, RFC, and GCA will be the same. Each of these elements use position manning to determine manpower. The following example is one of the more complex application situations.

Example:

Step 1. An installation has 10 positions in the RAPCON. ***NOTE:*** Positions do not relate to authorizations or personnel. A position is a required station where an individual must be available to fill at a moments notice. Those positions work the following hours.

Weekdays
10 positions for 10 hours (0600 - 1600)
10 positions for 8 hours (1600 - 2400)
5 positions for 6 hours (2400 - 0600)

Weekends
5 positions for 12 hours (0600 - 1800)
5 positions for 8 hours (1800 - 0200)

The equation for the RAPCON is as follows.
Weekdays Y = 160.7 + 28.262(X1)(X2)
Weekends Y = 8.783(X1)(X2)

The priceout is as follows:

WEEKDAYS	PRICEOUT	SUMMARY
10 positions for 10 hours (0600 - 1600)	28.262 (10) (10) = 2826.20	2826.20
10 positions for 8 hours (1600 - 2400)	28.262 (10) (8) = 2260.96	2260.96
5 positions for 6 hours (2400 - 0600)	28.262 (5) (6) = 847.86	847.86
TOTAL		5935.02

WEEKEND	PRICEOUT	SUMMARY
5 positions for 12 hours (0600 - 1800)	8.783 (5) (12) = 526.98	526.98
5 positions for 8 hours (1800 - 0200)	8.783 (5) (8) = 351.32	351.32
TOTAL		878.30

Step 2. Now that you have calculated the man-hours required for each position, add these hours together.
Weekday: Y = 160.7 + 5935.02
Weekend: Y = 878.30

Step 3. Add the weekday and weekend man-hours and divide the appropriate MAF.
Weekday: Y = 6095.72
Weekend: Y = 878.30
Total 6974.02/160.7 = 43.40 Manpower spaces.

Step 4. Determine the variances applicable to your installation and add them to the fractional manpower earned in Step 3.

Step 5. If you have a Control Tower, GCA or RFC, calculate the manpower required for those elements of Air Traffic Control. Once you have done that, add together the fractional manpower required for each applicable element and round up. Do not round up until you have calculated all the manpower earned in the control tower, RAPCON, GCA, and RFC.

GROUND CONTROLLED APPROACH (GCA) ELEMENT

The GCA Element is responsible for providing air traffic control radar operations to the installation's flying wing, transient, and civilian airfield and air traffic users. This element defines the manpower allowed to support an objective wing Airfield Operations (AO) Flight at Air Mobility Command, Air Combat Command, US Air Forces Europe, Air Force Materiel Command, Air Education and Training Command, Air Force Space Command, Air Force Special Operations Command, and Pacific Air Forces bases. It does not apply to Air National Guard and Air Force Reserve bases. This element does not apply to flights that have been cost compared (OMB Circular A-76). It does not apply to locations on the base closure list. This element applies to peacetime operations only. AFI 13-203 and AFI 13-213 contain USAF policy and procedural guidance for the AO Flight. This element has been developed in accordance with policy and guidance from HQ USAF/PER, AFCQMI, AFI 38-201, and AFMAN 38-208.

A4.1. Core Composition:

A4.1.1. **Core Manpower Requirement.** 14

A4.1.2. **Core Manpower Range.** 5 - 24

A4.1.3. **Programming Factor.** Position Manning.

A4.2. Standard Data:

A4.2.1. **Approval Date.** 7 January 1997

A4.2.2. **Man-hour Data Source.** Workshop measurement and historical documents.

A4.2.3. **Man-hour Equation.** $Y = 160.7 + 26.088(X1)(X2)$ Weekdays
$Y = 8.783(X1)(X2)$ Weekends

A4.2.4. **Workload Factor :**
A4.2.4.1. **Title.** A Required Position.
A4.2.4.2. **Definition.** A GCA position required to be manned in the GCA facility. The positions are required to be manned when the GCA is active.
A4.2.4.3. **Source.** Command Supplement to AFI 13-203. Each MAJCOM must spell-out in a command supplement to AFI 13-203, a breakout by base of the positions required to be manned at each GCA.
A4.2.4.4. **Title.** Hours of Operations for Position Manned.
A4.2.4.5. **Definition.** The hours of operations for each position required to be manned in the GCA. Obtain the hours of operations for each position required to be manned in the GCA during a shift.
A4.2.4.6. **Source.** Command Supplement to AFI 13-203. Each MAJCOM must have a command supplement to AFI 13-203. This supplement will have a breakout by base of the hours a position's required to be manned at each GCA.

A4.2.5. **Points of Contact:**
A4.2.5.1. **AFCQMI Representatives.** MSgt Geno Brabham and SSgt Pete Corey, AFCQMI/MQAA.
A4.2.5.2. **Functional Representative.** CMSgt Coney and SMSgt Robert James, AFFSA/XATF.

A4.3. Application Instructions:

A4.3.1. **Step 1.** Determine the core manpower by using the man-hour equation in paragraph A4.2.3 above. Obtain the number of positions required to work weekdays. For each position required to work on the weekday, obtain the number of hours the position is required to be open. Do this for each position required to have manning available during the weekday. Obtain the number of positions required to work weekends. For each position required to work on the weekends, obtain the number of hours the position is required to be open. Do this for each position required to have manning available during the weekend. Do not count the Chief Controller.

A4.3.2. **Step 2.** For Weekdays: Use the man-hour equation in paragraph A4.2.3 above and multiply each position and the hours that position is required to be open on the weekdays by the equation coefficient. For Weekends: Use the man-hour equation in paragraph A4.2.3 above and multiply each position and the hours that position is required to be open on the weekends by the equation coefficient.

A4.3.3. **Step 3.** Determine manpower requirements by dividing by the appropriate man-hour availability factor (MAF). ***Note:*** If your installation has only a GCA and/or an Airfield Management element, continue with paragraph A4.3.4 below. If not, go to paragraph A4.3.6 below.

A4.3.4. **Step 4.** Determine variance manpower by using the variances at Appendix C, Variances.

A4.3.5. **Step 5.** Add together the manpower earned from paragraphs A4.3.1 through A4.3.4 above. Skip paragraph A4.3.6. below and go to paragraphs A4.3.7 and A4.3.8 below.

A4.3.6. **Step 6.** If your installation has more than one ATC facility, you must apply all equations before rounding up. You must aggregate (total) the fractional man-hours for these functions before dividing by the appropriate MAF. After dividing by the appropriate MAF, determine the variance manpower for each applicable element and add this to the manpower total. Then round using the appropriate rounding rule.

A4.3.7. **Step 7.** For an example or more guidance on application of this element, see Appendix D, Application Worksheet.

A4.3.8. **Step 8.** Determine skill and grade distribution using the Manpower Table, Appendix B. Note: The highest skill/grade authorization is for the CCTLR.

A4.4. Statement of Conditions/Assumptions.

A4.4.1. **Flight Core Hours of Operation.** Normal flight core hours of operation are established by the MAJCOM in conjunction with the local wing commanders. Normal base flying operations are established by the wing commander. This manpower element provides manning for extended flying hours both on weekdays and weekend.

A4.4.2. **Air Traffic Controller Qualification Program.** Federal Aviation Regulations and flying safety dictate that air traffic controllers do not work in a position alone until they obtain minimum qualifications. Personnel on initial assignment from technical training are assigned to FAC 13E125 and work in the Control Tower or RAPCON until they obtain certifications and ratings required by AFI 13-203 to become a qualified controller. After becoming qualified, they are assigned to the Control Tower or RAPCON as appropriate. The number of personnel allocated for FAC 13E125 is determined by the annual Trained Personnel Requirement (TPR). The functional manager for AFSC 1C1X1, HQ AFMPC/DAAD4, coordinates with MAJCOM functional managers, determines allocations for each base, and advises AFCQMI of necessary adjustments to the AFMS.

Appendices
A - Process Oriented Description
B - Manpower Table
C - Variances
D - Application Worksheet

PROCESS ORIENTED DESCRIPTION

GCA ELEMENT

A4A.1. PROVIDES ARRIVAL CONTROL:
A4A.1.1. APPLIES RADAR/NONRADAR SEPARATION.
A4A.1.2. PROVIDES RADAR, ADVISORY, AND EMERGENCY AND SPECIAL HANDLING SERVICE.
A4A.1.3. ISSUES CLEARANCES.
A4A.1.4. PROVIDES COORDINATION.
A4A.1.5. ISSUES APPROACH AND LANDING INFORMATION.

A4A.2. PROVIDES RADAR FINAL CONTROL:
A4A.2.1. PROVIDES RADAR GUIDANCE/MONITORING SEPARATION.
A4A.2.2. PROVIDES RADAR, ADVISORY, AND EMERGENCY AND SPECIAL HANDLING SERVICE.
A4A.2.3. PROVIDES COORDINATION.
A4A.2.4. ISSUES CLEARANCE AND LANDING INFORMATION.

A4A.3. PROVIDES ASSISTANT CONTROL:
A4A.3.1. MAINTAINS FLIGHT PROGRESS STRIPS, FORMS, AND STATUS BOARDS.
A4A.3.2. PROVIDES COORDINATION.
A4A.3.3. MAINTAINS WEATHER INFORMATION.
A4A.3.4. PROVIDES FLIGHT DATA SERVICE.
A4A.3.5. ANNOTATES POSITION LOGS.
A4A.3.6. OPERATES AND MONITORS EQUIPMENT.

A4A.4. PROVIDES FLOW COORDINATION.

A4A.5. PROVIDES WATCH SUPERVISOR/SENIOR CONTROLLER SHIFT ACTIVITY CONTROL:
A4A.5.1. OVERSEES AND DIRECTS FACILITY OPERATION.
A4A.5.2. OPERATES/MONITORS EQUIPMENT.
A4A.5.3. MAINTAINS LOGS/FORMS.
A4A.5.4. PREPARES/CONDUCTS PRE-DUTY BRIEFING.
A4A.5.5. PROVIDES COORDINATION.

A4A.6. PROVIDES EQUIPMENT OPERATION AND MAINTENANCE:
A4A.6.1. OPERATES AND MONITORS EQUIPMENT.
A4A.6.2. PERFORMS EQUIPMENT CHECKS.
A4A.6.3. VERIFIES EQUIPMENT STATUS.

A4A.7. PROVIDES FACILITY/POSITION CERTIFICATION AND TRAINING:
A4A.7.1. PREPARES TRAINING.
A4A.7.2. CONDUCTS TRAINING.
A4A.7.3. RECEIVES TRAINING.

A4A.8. APPLIES CREW RESOURCE MANAGEMENT.

INDIRECT. Indirect work involves those tasks that are not readily identifiable with the work center's specific product or service. The major categories of standard indirect work are Supervision, Administration, Meetings, Training, Supply, Equipment Maintenance, and Cleanup. See AFMS 00AA for the Standard Indirect Description.

STANDARD MANPOWER TABLE

WORK CENTER/FAC	**APPLICABILITY MAN-HOUR RANGE**
Ground Controlled Approach/FAC 13E1	803.50 - 3856.80

AIR FORCE SPECIALTY TITLE	**AFSC**	**GRADE**	**MANPOWER REQUIREMENT**								
Air Traffic Control Superintendent	1C191	SMS								1	1
Air Traffic Control Craftsman	1C171	MSG	1	1	1	1	1	1	1	1	2
Air Traffic Control Craftsman	1C171	TSG	2	3	3	3	3	4	4	4	4
Air Traffic Control Journeyman	1C151	SSG	1	1	1	2	3	3	3	3	3
Air Traffic Control Journeyman	1C151	SRA	1	1	2	2	2	2	3	3	3
TOTAL			5	6	7	8	9	10	11	12	13

AIR FORCE SPECIALTY TITLE	**AFSC**	**GRADE**	**MANPOWER REQUIREMENT**								
Air Traffic Control Superintendent	1C191	SMS	1	1	1	1	1	1	1	1	1
Air Traffic Control Craftsman	1C171	MSG	2	2	2	2	2	2	2	2	3
Air Traffic Control Craftsman	1C171	TSG	4	4	4	5	5	5	5	5	5
Air Traffic Control Journeyman	1C151	SSG	3	4	5	5	5	6	6	7	7
Air Traffic Control Journeyman	1C151	SRA	4	4	4	4	5	5	6	6	6
TOTAL			14	15	16	17	18	19	20	21	22

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STANDARD MANPOWER TABLE

WORK CENTER/FAC	**APPLICABILITY MAN-HOUR RANGE**
Ground Controlled Approach/FAC 13E1	803.50 - 3856.80

AIR FORCE SPECIALTY TITLE	**AFSC**	**GRADE**	**MANPOWER REQUIREMENT**								
Air Traffic Control Superintendent	1C191	SMS	1	1							
Air Traffic Control Craftsman	1C171	MSG	3	3							
Air Traffic Control Craftsman	1C171	TSG	5	6							
Air Traffic Control Journeyman	1C151	SSG	7	7							
Air Traffic Control Journeyman	1C151	SRA	7	7							
TOTAL			23	24							

AIR FORCE SPECIALTY TITLE	**AFSC**	**GRADE**	**MANPOWER REQUIREMENT**								
TOTAL											

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VARIANCES

GCA ELEMENT SUMMARY

VARIANCE NUMBER	TITLE
NONE	NONE

APPLICATION WORKSHEET

GCA ELEMENT

A4D.1. The following application worksheet can be used in pricing AFMS 13E1, Control Tower Operations Element, Radar Approach Control (RAPCON), Radar Final Control (RFC), and Ground Controlled Approach (GCA).

A4D.2. The application of Control Tower, RAPCON, RFC, and GCA will be the same. Each of these elements use position manning to determine manpower. The following example is one of the more complex application situations.

Example:

Step 1. An installation has 10 positions in the GCA. ***NOTE:*** Positions do not relate to authorizations or personnel. A position is a required station where an individual must be available to fill at a moments notice. Those positions work the following hours.

Weekdays	Weekends
10 positions for 10 hours (0600 - 1600)	5 positions for 12 hours (0600 - 1800)
10 positions for 8 hours (1600 - 2400)	5 positions for 8 hours (1800 - 0200)
5 positions for 6 hours (2400 - 0600)	

The equation for the GCA is as follows.

Weekdays Y = 160.7 + 26.088(X1)(X2)
Weekends Y = 8.783(X1)(X2)

The priceout is as follows:

WEEKDAYS	PRICEOUT	SUMMARY
10 positions for 10 hours (0600 - 1600)	26.088 (10) (10) = 2608.80	2608.80
10 positions for 8 hours (1600 - 2400)	26.088 (10) (8) = 2087.04	2087.04
5 positions for 6 hours (2400 - 0600)	26.088 (5) (6) = 782.64	782.64
TOTAL		5478.48

WEEKEND	PRICEOUT	SUMMARY
5 positions for 12 hours (0600 - 1800)	8.783 (5) (12) = 526.98	526.98
5 positions for 8 hours (1800 - 0200)	8.783 (5) (8) = 351.32	351.32
TOTAL		878.30

Step 2. Now that you have calculated the man-hours required for each position, add these hours together.

Weekday: Y = 160.7 + 5478.48
Weekend: Y = 878.30

Step 3. Add the weekday and the weekend man-hours and divide by the appropriate MAF.

Weekday: Y = 5639.18
Weekend: Y = 878.30
Total 6517.48/160.7 = 40.56 Manpower spaces.

Step 4. Determine the variances applicable to your installation and add them to the fractional manpower earned in Step 3.

Step 5. If you have more than one ATC facility, calculate the manpower required for all elements of Air Traffic Control. Once you have done that, add together the fractional manpower required for each applicable element and use the appropriate rounding rule. Do not round up until you have calculated all the manpower earned in the control tower, RAPCON, GCA, and RFC.

RADAR FINAL CONTROL (RFC) ELEMENT

The RFC Element is responsible for providing air traffic control radar operations to the installation's flying wing, transient and civilian airfield and air traffic users. This element defines the manpower allowed to support an objective wing Airfield Operations (AO) Flight at Air Mobility Command, Air Combat Command, US Air Forces Europe, Air Force Materiel Command, Air Education and Training Command, Air Force Space Command, Air Force Special Operations Command, and Pacific Air Forces bases. It does not apply to Air National Guard and Air Force Reserve bases. This element does not apply to flights that have been cost compared (OMB Circular A-76). It does not apply to locations on the base closure list. It applies to peacetime operations only. AFI 13-203 and AFI 13-213 contain USAF policy and procedural guidance for the AO Flight. This element has been developed in accordance with policy and guidance from HQ USAF/PER, AFCQMI, AFI 38-201, and AFMAN 38-208.

A5.1. Core Composition:

A5.1.1. **Core Manpower Requirement.** 7

A5.1.2. **Core Manpower Range.** 5 - 10

A5.1.3. **Programming Factor.** Position Manning.

A5.2. Standard Data:

A5.2.1. **Approval Date.** 7 January 1997.

A5.2.2. **Man-hour Data Source.** Workshop measurement and historical documents.

A5.2.3. **Man-hour Equation.** Y = 28.262(X1)(X2) Weekdays
Y = 8.783(X1)(X2) Weekends

A5.2.4. **Workload Factor :**
A5.2.4.1. **Title.** A Required Position.
A5.2.4.2. **Definition.** A RFC position required to be manned in the RFC facility. The positions are required to be manned when the RFC is active.
A5.2.4.3. **Source.** Command Supplement to AFI 13-203. Each MAJCOM must spell-out in a command supplement to AFI 13-203, a breakout by base the positions required to be manned at each RFC.
A5.2.4.4. **Title.** Hours of Operation for Position Manned.
A5.2.4.5. **Definition.** The hours of operations for each position required to be manned in the RFC. Obtain the hours of operations for each position required to be manned in the RFC during a shift.
A5.2.4.6. **Source.** Command Supplement to AFI 13-203. Each MAJCOM must spell-out in a command supplement to AFI 13-203, a breakout by base the hours a position's required to be manned at each RFC.

A5.2.5. **Points of Contact:**
A5.2.5.1. **AFCQMI Representatives.** MSgt Geno Brabham and SSgt Pete Corey, AFCQMI/MQAA.
A5.2.5.2. **Functional Representative.** CMSgt Coney and SMSgt Robert James, AFFSA/XATF.

A5.3. Application Instructions:

A5.3.1. **Step 1.** Determine the core manpower by using the man-hour equation in paragraph A5.2.3 above. Obtain the number of positions required to work weekdays. For each position required to work on the weekday, obtain the number of hours the position is required to be open. Do this for each position required to have manning available during the weekday. Obtain the number of positions required to work weekends. For each position required to work on the weekends obtain the number of hours the position is required to be open. Do this for each position required to have manning available during the weekend. RFC facilities do not earn a separate CCTLR authorization.

A5.3.2. **Step 2.** For Weekdays: Use the man-hour equation in paragraph A5.2.3 above and multiply each position and the hours that position is required to be open on the weekdays by the equation coefficient. For Weekends: Use the man-hour equation in paragraph A5.2.3 above and multiply each position and the hours that position is required to be open on the weekends by the equation coefficient.

A5.3.3. **Step 3.** Determine manpower requirements by dividing by the appropriate man-hour availability factor (MAF). ***Note:*** If your installation has only a RFC and/or an Airfield Management element, continue with paragraph A5.3.4 below. If not, go to paragraph A5.3.6 below.

A5.3.4. **Step 4.** Determine variance manpower by using the variances in Appendix C.

A5.3.5. **Step 5.** Add together the manpower earned from paragraphs A5.3.1 through A5.3.4 above. Skip paragraph A5.3.6 below and go to paragraphs A5.3.7 and A5.3.8 below.

A5.3.6. **Step 6.** If your installation has more than one ATC facility, you must apply all equations before rounding up. You must aggregate (total) the fractional man-hours for these functions before dividing by the appropriate MAF. After dividing by the appropriate MAF, determine the variance manpower for each applicable element and add this to the manpower total. Then round using the appropriate rounding rule.

A5.3.7. **Step 7.** For an example or more guidance on application of this element, see Appendix D, Application Worksheet.

A5.3.8. **Step 8.** Determine skill and grade distribution using the manpower table in this section.

A5.4. Statement of Conditions/Assumptions:

A5.4.1. **Flight Core Hours of Operation.** Normal flight core hours of operation are established by the MAJCOM in conjunction with the local wing commanders. Normal base flying operations are established by the wing commander. This manpower standard provides manning for extended flying hours both on weekdays and weekends.

A5.4.2**. Air Traffic Controller Qualification Program.** Federal Aviation Regulations and flying safety dictate that air traffic controllers do not work in a position alone until they obtain minimum qualifications. Personnel on initial assignment from technical training are assigned to FAC 13E125 and work in the Control Tower or Radar facility until they obtain certifications and ratings required by AFI 13-203 to become a qualified controller. After becoming qualified, they are assigned to the Control Tower or Radar FAC as appropriate. The number of personnel allocated for FAC 13E125 is determined by the annual Trained Personnel Requirement (TPR). The functional manager for AFSC 1C1X1, HQ AFPC/DPAAD4, coordinates with MAJCOM functional managers, determines allocations for each base, and advises AFCQMI of necessary adjustments to the AFMS.

Appendices
A - Process Oriented Description
B - Manpower Table
C - Variances
D - Application Worksheet

PROCESS ORIENTED DESCRIPTION

RFC ELEMENT

A5A.1. PROVIDES RADAR FINAL CONTROL:
A5A.1.1. PROVIDES RADAR GUIDANCE/MONITORING AND SEPARATION.
A5A.1.2. PROVIDES ADVISORY, EMERGENCY, AND SPECIAL HANDLING SERVICE.
A5A.1.3. PROVIDES COORDINATION.
A5A.1.4. ISSUES CLEARANCE AND LANDING INFORMATION.

A5A.2. PROVIDES WATCH SUPERVISOR/SENIOR CONTROLLER SHIFT ACTIVITY CONTROL:
A5A.2.1. OVERSEES FACILITY OPERATION.
A5A.2.2. OPERATES/MONITORS EQUIPMENT.
A5A.2.3. MAINTAINS LOGS/FORMS.
A5A.2.4. PREPARES/CONDUCTS PREDUTY BRIEFINGS.
A5A.2.5. PROVIDES COORDINATION.

A5A.3. PROVIDES EQUIPMENT OPERATION AND MAINTENANCE:
A5A.3.1. OPERATES AND MONITORS EQUIPMENT.
A5A.3.2. PERFORMS EQUIPMENT CHECKS.
A5A.3.3. VERIFIES EQUIPMENT STATUS.

A5A.4. PROVIDES FACILITY/POSITION CERTIFICATION AND TRAINING:
A5A.4.1. PREPARES TRAINING.
A5A.4.2. CONDUCTS TRAINING.
A5A.4.3. RECEIVES TRAINING.

A5A.5. APPLIES CREW RESOURCE MANAGEMENT.

INDIRECT. Indirect work involves those tasks that are not readily identifiable with the work center's specific product or service. The major categories of standard indirect work are Supervision, Administration, Meetings, Training, Supply, Equipment Maintenance, and Cleanup. See AFMS 00AA for the Standard Indirect Description.

STANDARD MANPOWER TABLE

WORK CENTER/FAC	**APPLICABILITY MAN-HOUR RANGE**
Radar Final Control/FAC 13E1	803.50 - 3856.80

AIR FORCE SPECIALTY TITLE	**AFSC**	**GRADE**	**MANPOWER REQUIREMENT**								
Air Traffic Control Superintendent	1C191	SMS								1	1
Air Traffic Control Craftsman	1C171	MSG	1	1	1	1	1	1	1	1	2
Air Traffic Control Craftsman	1C171	TSG	2	3	3	3	3	4	4	4	4
Air Traffic Control Journeyman	1C151	SSG	1	1	1	2	3	3	3	3	3
Air Traffic Control Journeyman	1C151	SRA	1	1	2	2	2	2	3	3	3
TOTAL			5	6	7	8	9	10	11	12	13

AIR FORCE SPECIALTY TITLE	**AFSC**	**GRADE**	**MANPOWER REQUIREMENT**								
Air Traffic Control Superintendent	1C191	SMS	1	1	1	1	1	1	1	1	1
Air Traffic Control Craftsman	1C171	MSG	2	2	2	2	2	2	2	2	3
Air Traffic Control Craftsman	1C171	TSG	4	4	4	5	5	5	5	5	5
Air Traffic Control Journeyman	1C151	SSG	3	4	5	5	5	6	6	7	7
Air Traffic Control Journeyman	1C151	SRA	4	4	4	4	5	5	6	6	6
TOTAL			14	15	16	17	18	19	20	21	22

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STANDARD MANPOWER TABLE

WORK CENTER/FAC	**APPLICABILITY MAN-HOUR RANGE**
Radar Final Control/FAC 13E1	803.50 - 3856.80

AIR FORCE SPECIALTY TITLE	**AFSC**	**GRADE**	**MANPOWER REQUIREMENT**								
Air Traffic Control Superintendent	1C191	SMS	1	1							
Air Traffic Control Craftsman	1C171	MSG	3	3							
Air Traffic Control Craftsman	1C171	TSG	5	6							
Air Traffic Control Journeyman	1C151	SSG	7	7							
Air Traffic Control Journeyman	1C151	SRA	7	7							
TOTAL			23	24							

AIR FORCE SPECIALTY TITLE	**AFSC**	**GRADE**	**MANPOWER REQUIREMENT**								
TOTAL											

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VARIANCES

RFC ELEMENT

SUMMARY

VARIANCE NUMBER	**TITLE**
NONE	NONE

APPLICATION WORKSHEET

RFC ELEMENT

A5D.1. The following application worksheet can be used in pricing AFMS 13E1, Control Tower Operations Element, Radar Approach Control (RAPCON), Radar Final Control (RFC), and Ground Controlled Approach (GCA).

A5D.2. The application of Control Tower, RAPCON, RFC, and GCA will be the same. Each of these elements use position manning to determine manpower. The following example is one of the more complex application situations.

Example:

Step 1. An installation has 4 positions in the RFC. NOTE: Positions do not relate to authorizations or personnel. A position is a required station where an individual must be available to fill at a moments notice. Those positions work the following hours.

Weekdays	Weekends
3 positions for 10 hours (0600 - 1600)	2 positions for 12 hours (0600 - 1800)
3 positions for 8 hours (1600 - 2400)	2 positions for 8 hours (1800 - 0200)
1 position for 6 hours (2400 - 0600)	

The equation for the RFC is as follows.

Weekdays Y = 26.088(X1)(X2)
Weekends Y = 8.783(X1)(X2)

The priceout is as follows:

WEEKDAYS	PRICEOUT	SUMMARY
3 positions for 10 hours (0600 - 1600)	26.088 (3) (10) = 782.64	782.64
3 positions for 8 hours (1600 - 2400)	26.088 (3) (8) = 626.11	626.11
1 positions for 6 hours (2400 - 0600)	26.088 (1) (6) = 156.53	156.53
TOTAL		1565.28

WEEKEND	PRICEOUT	SUMMARY
2 positions for 12 hours (0600 - 1800)	8.783 (2) (12) = 210.79	210.79
2 positions for 8 hours (1800 - 0200)	8.783 (2) (8) = 140.53	140.53
TOTAL		351.32

Step 2. Now that you have calculated the man-hours required for each position, add these hours together.

Weekday: Y = 1565.28
Weekend: Y = 351.32

Step 3. Add the weekday and the weekend man-hours and divide by the appropriate MAF.

Weekday: Y = 1565.28
Weekend: Y = 351.32
Total 1916.60/160.7 =11.93 Manpower spaces.

Step 4. Determine the variances applicable to your installation and add them to the fractional manpower earned in Step 3.

Step 5. If you have a Control Tower, RAPCON or GCA, calculate the manpower required for those elements of Air Traffic Control. Once you have done that, add together the fractional manpower required for each applicable elements and then use the appropriate rounding rule. Do not round up until you have calculated all the manpower earn in the control tower, RAPCON, GCA, and RFC.

AIRFIELD MANAGEMENT ELEMENT

The Airfield Management element directs and coordinates airfield activities and provides base operations services. Major functions include airfield inspections and checks, coordinating airfield maintenance and other activities affecting airfield facilities, developing flightline drivers training program guidance, processing flight data, providing aircrew support, and responding to emergencies. This element defines the manpower allowed to support an objective wing Airfield Operations Flight (AO) Flight at Air Mobility Command, Air Combat Command, US Air Forces Europe, Air Force Materiel Command, Air Education and Training Command, Air Force Space Command, Air Force Special Operations Command, and Pacific Air Forces bases. It does not apply to Air National Guard and Air Force Reserve bases. This element does not apply to flights which have been cost compared (OMB Circular A-76). It does not apply to locations on the base closure list. This element applies to peacetime operations only. AFI 13-203 and AFI 13-213 contain USAF policy and procedural guidance for the AO Flight. This element has been developed in accordance with policy and guidance from HQ USAF/PER, AFCQMI, AFI 38-201, and AFMAN 38-208.

A6.1. Core Composition:

A6.1.1. **Core Manpower Requirement.** 14

A6.1.2. **Core Manpower Range.** 4 - 21

A6.1.3. **Programming Factor.** Position Manning.

A6.2. Standard Data:

A6.2.2. **Approval Date.** 7 January 1997

A6.2.3. **Man-hour Data Source.** Workshop measurement and historical documents.

A6.2.4. **Man-hour Equation.** Y = 474.456 +8.696 (X1) (X2) + 1.896 (X3)
Chievres: Y = 5
USAF Academy Y = 3
Soto Cono Y = 6

A6.2.5. **Workload Factor:**
A6.2.5.1. **Title.** Hours of Operation.
A6.2.5.2. **Definition.** The hours of operation for Airfield Management.
A6.2.5.3. **Source.** Command supplement to AFI 13-213. Each MAJCOM will have a command supplement to AFI 13-213. This supplement will have a breakout by base of the hours of operation for Airfield Management.
A6.2.5.4. **Title.** Number of Days Open.
A6.2.5.5. **Definition.** The number of days a week the Airfield Management facility is open.
A6.2.5.6. **Source.** Command supplement to AFI 13-213. Each MAJCOM will have a command supplement to AFI 13-213. This supplement will have a breakout by base of the number of days of the week the Airfield Management office is open.
A6.2.5.7. **Title.** An Airfield Check.
A6.2.5.8. **Definition.** The average number of airfield checks performed as identified in AFI 13-213. An airfield check includes, but is not limited to, the following checks: Foreign Object Damage (FOD), response to in-flight emergencies, periodic inspections of construction areas, and Bird/Aircraft Strike Hazard (BASH).
A6.2.5.9. **Source.** AF Form 1924, AFTO Form 277, and Local Logs.

A6.2.6. **Points of Contact:**
A6.2.6.1. **AFCQMI Representatives.** SSgt Eddie Farnington, AFCQMI/MQAA.
A6.2.6.2. **Functional Representative.** CMSgt Phillip Davenport, AFFSA/XAF.

A6.3. Application Instructions:

A6.3.1. **Step 1.** Determine the core manpower by using the man-hour equation in paragraph A6.2.4. Obtain hours of operation (X1), the number of days open (X2), and the number of airfield checks (X3) for the sources identified.

A6.3.2. **Step 2.** Compute the man-hours earned for the Airfield Management element. Divide by the appropriate man-hour availability factor (MAF).

A6.3.3. **Step 3.** Determine variance manpower by using Appendix C, Variances. Sum the manpower earned in paragraphs A6.3.1 and A6.3.2 and use the appropriate rounding rule.

A6.3.4. **Step 4.** For an example or more guidance on application of this element, see Appendix D, Application Worksheet.

A6.3.5. **Step 5.** Determine skill and grade distribution using the Manpower Table, Appendix B.

A6.4. Statement of Conditions/Assumptions. Normal flight core hours of operation are established by the MAJCOM in conjunction with the local wing commanders. Normal base flying operations are established by the wing commander. This manpower standard provides manning for extended flying hours both on weekdays and weekend.

Appendices
A - Process Oriented Description
B - Manpower Table
C - Variances
D - Application Worksheet

PROCESS ORIENTED DESCRIPTION

AIRFIELD MANAGEMENT ELEMENT

A6A.1. COORDINATES/DEVELOPS/REVIEWS/DIRECTS ON AIRFIELD ACTIVITIES. Develops, coordinates, directs, and reviews airfield activities and facilities such as airfield maintenance, support agreements, monitoring controlled areas, wing plans, and emergency action responses to ensure support for flying mission through day-to-day interaction with agencies to include civil engineering, wing safety, air traffic control (ATC), and base officials.

A6A.2. PERFORMS AIRFIELD FACILITY INSPECTION. Identifies violations of established criteria IAW AFI 13-213. Reports any discrepancies/hazards to the appropriate agencies for correction, documents actions, and monitors status until corrected.

A6A.3. PERFORMS AIRFIELD CHECK IAW AFI 13-213. Checks airfield for, and responds to airfield incidents, user complaints, aircraft incidents, arresting system engagements, heavy aircraft operations, severe weather, runway surface conditions, and runway condition readings, as well as snow removal, BASH responses, and foreign object damage (FOD).

A6A.4. PARTICIPATES IN BIRD AIRCRAFT STRIKE HAZARD (BASH) PROGRAM AND ANIMAL CONTROL PROGRAM IAW THE BIRD STRIKE HAZARD REDUCTION PROGRAM AND LOCAL DIRECTIVE. Attends Bird Hazard Working Group (BHWG) committee meetings and ensures availability of bird/animal dispersal equipment, responds to bird/animal activity, and documents all activity for local trends.

A6A.5. MAINTAINS/PROCESSES NOTICE TO AIRMAN (NOTAM) AND AIRFIELD ADVISORIES. Validates, transmits, cancels, revises, and notifies appropriate agencies of all airfield NOTAMs and advisories. Validates the accuracy of the NOTAM data base and file allocations tables. Maintains all required documentation, posts updates and summaries as necessary.

A6A.6. PLANS SPECIAL PROJECTS OR EVENTS AFFECTING AIRFIELD USE. Attends planning meetings and develops plans for activities impacting airfield facilities to include air shows, civilian fly-ins, etc.

A6A.7. SUPPORTS AIRFIELD WAIVER PROGRAM AND RECERTIFICATION. Evaluates all proposed airfield waivers for impact to the airfield environment and participates in the annual recertification review.

A6A.8. PARTICIPATES AS MEMBER OF THE AIRFIELD OPERATIONS BOARD. Prepares and briefs airfield agenda/trend items to include: airfield activities/problems, pavement and lighting maintenance, construction projects, airshows, closures/restrictions, runway incursions, BASH, snow removal, airfield waivers, flightline driving, FOD, etc.

A6A.9. PROCESSES FLIGHT PLANS FOR PLANNING, ENROUTE, AND TERMINAL PHASES OF FLIGHT. Receives, reviews, and determines address routing indicators for all flight plans. Transmits outbound flight plan data to appropriate ATC agencies, documents all outbound flight data information, notifies appropriate agencies, amends flight plans as necessary, and monitors status until aircraft departure. Processes miscellaneous flight data message. Responds to station queries, administrative requests, QALQ, QRUQ, QSLQ, etc., and documents all information.

A6A.10. PROVIDES TRANSIENT AIRCRAFT AND AIRCREW SUPPORT REQUIREMENTS. Maintains aircrew lounge, temporary storage of classified material, and other support as necessary. Prepares briefings for transient aircrews on relative airfield operations. Maintains only minimum amount of classified material to support the occasional transient aircrew in the event of a compromise, changeover, lengthy maintenance delay, etc. Receives transient unit's requirements and coordinates with support agencies to determine capability to support.

A6A.11. PROCESSES INBOUND NOTIFICATIONS. Receives/acknowledges inbound flight information, documents inbound flight data information, monitors aircraft arrival status, makes notification to appropriate agencies, and verifies aircrews intentions.

A6A.12. ESTABLISHES AND FOLLOWS OVERDUE AIRCRAFT PROCEDURES. Determines if an aircraft is overdue and initiates appropriate actions to locate the aircraft. For example, contacts appropriate ATC agencies, monitors search progress, and documents all actions until situation is resolved.

A6A.13. PROCESSES FLIGHT NOTIFICATION DEPARTURE MESSAGES. Receives actual departure notifications and notifies appropriate agencies. Transmits departure flight data information to destination bases following aircraft departure and documents all actions.

A6A.14. PROCESSES LANDING NOTIFICATIONS. Receives and documents actual arrival notifications from ATC agencies and relays landing time to appropriate agencies.

A6A.15. PROCESSES CIVILIAN/MILITARY AIRCRAFT "NO FLIGHT PLAN" ARRIVALS. Notifies appropriate agencies of unauthorized civilian/military landing. For civilian aircraft, completes appropriate forms for reporting incidents to the FAA, determines appropriate landing fees, and forwards reports to higher headquarters.

A6A.16. MAINTAINS FLIGHT PLANNING ROOM. Maintains flight planning room equipment, maps, displays, and publications IAW AFI 13-213.

A6A.17. PROVIDES NOTIFICATION TO ATC AGENCIES ON INSTRUMENT ROUTE/VISUAL ROUTE (IR/VR) SCHEDULING. Receives notifications of IR/VR scheduling and transmits activation times to necessary agencies.

A6A.18. PROCESSES CIVIL AIRCRAFT USE OF DOD AIRFIELDS. Processes non-DOD aircraft landing permits. Establishes application procedures for local approval (Civil Fly-ins, Civil Landing Permits, Civil Reserve Air Fleet (CRAF)), analyzes request, recommends actions and forwards multiple location requests to HQ USAF/MAJCOM for action.

A6A.19. CONDUCTS DEFENSE MAPPING AGENCY (DMA) ANNUAL FACILITY REVIEW. Reviews and validates the DMA Automated Facility/Airfield Data Survey, as required, for accuracy with all base agencies.

A6A.20. CONDUCTS DMA ANNUAL FLIP REVIEW. Reviews, validates, and updates annual DMA Automatic Initial Distribution (AID) listings with sub-accounts and forwards to DMA.

A6A.21. PROCESSES AND DISTRIBUTES FLIP/CHART PRODUCTS. Orders, receives, validates, and distributes AID listing and special product requests.

A6A.22. DEVELOPS FLIGHTLINE DRIVER TRAINING PROGRAM GUIDANCE. Prepares local guidance and directives covering program administration, training, testing, certification, enforcement, and quality control.

INDIRECT. Indirect work involves those tasks that are not readily identifiable with the work center's specific product or service. The major categories of standard indirect work are Supervision, Administration, Meetings, Training, Supply, Equipment Maintenance, and Cleanup. See AFMS 00AA for the Standard Indirect Description.

STANDARD MANPOWER TABLE

WORK CENTER/FAC	**APPLICABILITY MAN-HOUR RANGE**
Base Operations/13E1	642.80 - 3374.70

AIR FORCE SPECIALTY TITLE	**AFSC**	**GRADE**	**MANPOWER REQUIREMENT**								
Air Operation Manger	1C000	CMS									
Airfield Mgt Supt	1C091	SMS				1	1	1	1	1	1
Airfield Mgt Crftmn	1C071	MSG	1	1	1	1	1	1	1	1	1
Airfield Mgt Crftmn	1C071	TSG	1	1	1	1	1	1	1	1	2
Airfield Mgt Jrnymn	1C051	SSG		1	2	2	2	2	3	3	3
Airfield Mgt Jrnymn	1C051	SRA	2	2	2	2	3	3	3	3	3
Airfield Mgt Apr	1C031	A1C						1	1	2	2
TOTAL			4	5	6	7	8	9	10	11	12

AIR FORCE SPECIALTY TITLE	**AFSC**	**GRADE**	**MANPOWER REQUIREMENT**								
Air Operations Manager	1C000	CMS				1	1	1	1	1	1
Airfield Mgt Supt	1C091	SMS	1	1	1						
Airfield Mgt Crftmn	1C071	MSG	1	1	1	1	1	1	1	1	1
Airfield Mgt Crftmn	1C071	TSG	2	2	2	2	3	3	3	3	3
Airfield Mgt Jrnymn	1C051	SSG	3	3	3	4	4	4	5	5	5
Airfield Mgt Jrnymn	1C051	SRA	3	4	4	4	4	5	5	5	6
Airfield Mgt Apr	1C031	A1C	3	3	4	4	4	4	4	5	5
TOTAL			13	14	15	16	17	18	19	20	21

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VARIANCES

AIRFIELD MANAGEMENT ELEMENT

SUMMARY

VARIANCE NUMBER	TITLE
A6C.1.	Positive Mission Variance for Ground/Ramp Control.
A6C.2.	Positive Mission Variance for JCS/NATO/ANG Exercise and Red Flag/Green Flag Support.
A6C.3.	Positive Mission Variance for DV Support/Coordination.
A6C.4.	Positive Mission Variance for National Airborne Operations Center (NAOC)

VARIANCES

AIRFIELD MANAGEMENT ELEMENT

DETAIL

A6C.1. **Title.** Positive Mission Variance for Ground/Ramp Control.

A6C.1.1. **Definition.** This variance provides whole manpower requirements to monitor military aircraft movement at Honolulu International Airport which has military designated areas. At this location, FAA control relinquishes responsibility for military aircraft movement through certain designated areas.

A6C.1.2. **Impact.** +7 manpower requirements

A6C.1.3. **Applicability.** This variance applies to Hickam AFB only.

A6C.2. **Title.** Positive Mission Variance for JCS/NATO/ANG Exercise and Red Flag/Green Flag Support.

A6C.2.1. **Definition.** This variance provides whole manpower requirements for TDY support of JCS/NATO/ANG Exercise and Red Flag/Green Flag Support. For JCS/NATO/ANG Exercises, four airfield operations personnel are TDY to six different locations per year for an average of 20 days each.

A6C.2.2. **Impact.** +1 AFSC 1C071 TSG manpower requirements for Aviano AB
+1 AFSC 1C071 TSG manpower requirements for RAF Mildenhall
+2 AFSC 1C071 TSG manpower requirements for Nellis AFB

A6C.2.3. **Applicability.** Resources needed to support these exercises will be taken from these locations to the largest extent possible within manning limitations. This variance also provides two whole manpower requirements to support Red Flag/Green Flag exercises.

A6C.3. **Title.** Positive Mission Variance for DV Support/Coordination.

A6C.3.1. **Definition.** This variance provides whole manpower requirements for DV support. Ramstein has an extremely high number of foreign government and U.S. officials, and military DVs. Andrews AFB's Base Operations is required to coordinate all support functions prior to and after DV landings and takeoffs. Wright-Patterson AFB supports a large number of Contractual/Governmental DVs. Offutt AFB is required by STRATCOM Commander to maintain and publish a daily listing of inbound and outbound DVs. This DV log is sent to approximately 12 separate locations and is in addition to the regular base operations DV log.

A6C.3.2. **Impact.** +2 manpower requirements for Andrews AFB
+1 manpower requirement for Ramstein AB
+1 manpower requirement for Wright-Patterson AFB
+1 manpower requirement for Offutt AFB

A6C.3.3. **Applicability.** This variance applies to Andrews AFB, Ramstein AB, Wright-Patterson AFB, and Offutt AFB.

A6C.4. **Title.** Positive Mission Variance for National Airborne Operations Center (NAOC).

A6C.4.1. **Definition.** This variance provides manpower required to provide a NAOC Alert Facility Manager at Seymour Johnson AFB. Seymour Johnson AFB has been the primary weather divert base since the permanent NAOC facility was established in 1990.

A6C.4.2. **Impact.** +1 manpower requirement

A6C.4.3. **Applicability.** Applies to Seymour-Johnson AFB.

APPLICATION WORKSHEET

AIRFIELD MANAGEMENT ELEMENT

The following application worksheet can be used in pricing AFMS 13E1, Airfield Management Element.

Step1. Obtain hours of operation (X1) and the number of days open (X2)

Step 2. Obtain the number of airfield checks (X3) for the sources identified.

Step 3. Compute the man-hours earned for the Airfield Management element. Divide by the appropriate man-hour availability factor (MAF).

Step 4. Determine variance manpower by using the variances at Appendix C, Variances. Sum the manpower earned in paragraphs A6.2 and A6.3 and use the appropriate rounding rule.

Example 1:

Step 1. Base XXX hours of operation for Airfield Management are 14 hours a day, 7 days a week.

8.696 (14) (7) = 852.21

Step 2. Base XXX performs an average of 175 airfield checks per month.

1.896 x 175 = 331.8

Step 3. Sum base XXX man-hours for Airfield Management and add the "a" value of 474.456. Divide by the appropriate MAF.

474.456 + 852.21 + 331.8 = 1658.47/160.7 = 10.32

Step 4. Determine variance manpower and sum with step 3.

3 (variance spaces) + 10.32 = 13.32 or 14 spaces

Example 2. Base XYZ hours of operations for Airfield Management are as follows.

HOURS OF OPERATION	**MAN-HOURS EARNED**
19 hours a day for 5 days (weekdays)	8.696 (19) (5) = 826.12
12 hours a day for 2 days (weekends)	8.696 (12) (5) = 208.70

Step 1. Base XYZ hours of operation for Airfield Management computations.

Weekdays 8.696 (19) (5) = 856.12
Weekends 8.696 (12) (5) = 208.70
856.12 + 208.70 = 1064.82

Step 2. Base XYZ performs an average of 175 airfield checks per month.

1.896 x 175 = 331.8

Step 3. Sum base XYZ man-hours for Airfield Management and add the "a" value of 474.456. Divide the appropriate MAF.

474.456 + 1064.82 + 331.8 = 1871.08/160.7 = 11.64

Step 4. Determine variance manpower and sum with step 3. Use the appropriate rounding rule.

3 (variance spaces) + 11.64 = 14.64 or 15 spaces